

## ABSTRACT

The invention provides transgenic non-human animals, such as transgenic rodents and transgenic non-human mammalian cells harboring a transgene which eliminates the expression of a  $\beta$ -secretase BACE1. Also provided are methods of diagnosing 5 neurodegenerative diseases including Alzheimer's Disease as well as methods of identifying agents which modulate or treat Alzheimer's Disease and related pathology.

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